SUMMARY

Three to six weeks-old white rats were used to study the affect of PI on lathyrisim induced by BAPN administration. Four groups were used, each of which were divided into four subgroups. These were normal subgroup, PI subgroup, BAPN subgroup and PI + BAPN subgroup. The rats were fed with commercial rat pellets and water ad libitum. The normal subgroup received no treatment. The PI subgroup received 3,200 to 6,400 KIU Trasylol/100 gm body weight/day I/p for one week and/or 140 to 200 mg EACA/100 gm body weight/day I/p for one week. The BAPN subgroup received 60 to 100 mg/100 gm body weight/day I/p for one week. The PI + BAPN subgroup received both PI and BAPN at the same dosages given to PI and BAPN subgroups. After sacrifice, one gm of shaved back skin was finely minced and soluble collagen was extracted for 24 hours with 1 M NaCl in the cold room (5°C). The length and width of exostoses at the adductor longus muscle insertions were measured and the area of the base calculated. The largest cross-sectional area of periosteum at the adductor longus muscle insertions was cut from a photograph of the stained paraffin section and weighed. The histology of the periosteum was also studied.

The amount of salt extractable collagen and weights of the photographs of the periosteum of both the BAPN and PI + BAPN subgroups were significantly greater than that for the normal
subgroup; and no significant difference existed between the normal versus the PI subgroups or the BAPN versus the PI + BAPN subgroups. The area of the bases of exostoses of the BAPN subgroup were not significantly different from that for the PI + BAPN subgroup. No difference in the histological structure of periosteum between the normal and the PI rats or between the BAPN and the PI + BAPN rats were seen.

The results from these experiments indicate that BAPN does not seem to stimulate the connective tissue cells to release Trasylol- or EACA-sensitive proteolytic enzymes to break intermolecular and intramolecular crosslinkages of collagen, since the PI did not prevent BAPN from causing increased amounts of cold saline soluble collagen or exostosis formation.
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